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TRANSPORTATION OF MILK.

RESPONSIBILITY OF RAILROAD COMPANY FOR CONDITION OF MILK DURING TRANSPORTATION.

In 1912 the city of Chicago, Ill., adopted an ordinance governing the sale of milk in the city. Certain provisions of this ordinance, which regulated the pasteurization of milk, were declared to be reasonable and valid by the supreme court of the State. (Pub. Health Repts. Reprint 342, p. 96.)

The ordinance prohibited bringing into the city milk the temperature of which was above 55° F. It was also required that the milk should be transported in sealed cans. A railroad company was prosecuted, charged with bringing into the city milk which was above the required temperature. The Illinois Supreme Court decided that, unless it could be shown that it was possible for a railroad company to ascertain the temperature of the milk without having access to the interior of the cans, the ordinance was unreasonable and not enforceable so far as it applied to railroad companies bringing milk into the city.

The court was careful, however, to make it clear that a city has the right to protect the health of its inhabitants by reasonable regulations governing the importation and sale of milk.

The opinion is published in this issue of the Public Health Reports, page 155.

PUBLIC HEALTH ADMINISTRATION IN ST. PAUL, MINN.¹

By G. B. YOUNG, Surgeon, United States Public Health Service.

DIVISION OF FOOD INSPECTION.

This branch of activity, as supplemental to dairy and meat inspection, was inaugurated in July, 1914, by providing for one inspector at \$1,320.

The place was the first one in the department, it is understood, to be filled under the new civil-service law.

¹ Continued from last week's Public Health Reports.

The present employee had been engaged for several years in the grocery and meat business as salesman for packing-house products. He impressed the writer as being zealous, intelligent, and as well informed as to his duties as would be expected in view of the entire lack of instruction.

It was found that there were no prescribed routine of inspections, no rules of procedure, no forms for recording conditions found, no record of orders issued. In short, the entire operations of the food-inspection division consisted of the entries made in a pocket notebook and a weekly report made on the form used by the sanitary police and other field men, which is simply an incomplete summary of the number of inspections made. There has never been any supervision or check on the methods of the inspector. The inspection is, therefore, simply a patrol inspection, confined principally to the more obvious sanitary conditions and the general quality of food.

The inspector states that in 1915 there were a "few prosecutions." No record of these could be found in the bureau. It may be said here as of general application that the bureau has no system of starting or conducting prosecutions and keeps no records on the subject.

The procedure in the case of food prosecutions is substantially the same as in other fields. The inspector decides who shall be sued, swears out a warrant, has it served, and appears in court. In special cases, particularly meat cases, the health officer occasionally appears in court. The court sustains the inspector, on the whole, very well. Sentences are frequently suspended pending compliance, but this is proper, because health bureau prosecutions are primarily corrective and not punitive.

There seems to be some reason to think, however, that the bureau does not interest itself sufficiently in the support of its inspectors through court action or by moving for the revocation of licenses. "Crusades" and similar spectacular methods are almost always objectionable, but the determined "drive" after conspicuous offenders is essential to progress.

The inspector's list of places under his supervision shows:¹

Bakeries	75
Candy factories.....	17
Commission houses.....	36
Peddlers	150
Food shops other than butchers'.....	650
Butchers	230

He does not inspect the butcher shops except as incidental to inspection of groceries and other food establishments at the same locations. In this connection it must be said that the impression was obtained from both food and meat inspectors that there was a certain

¹ The health bureau does not concern itself with the canned goods in the wholesale houses.

amount of jealousy as to one infringing the territory of the other, especially as to one reporting anything needing correction in cases on the border line of the two jurisdictions. As neither force has any supervision in the field and practically none in the office, the situation opens the way for abuses.

The inspector has no control over pop factories or places for the manufacture and sale of sirups, soft drinks, and bottled waters.

In St. Paul, bakeries are not licensed; they can be located in cellars or in other improper places as far as the city law is concerned. Section 3890 of the State health law provides that they shall be "light, dry, and airy," but fixes no standards except that a floor more than 5 feet below the surface of the ground must not be of wood. It also prohibits sleeping rooms, privies, etc., from opening into bakeries and other similar establishments. The enforcement of this law is the duty of the State dairy and food commissioner, although it does not appear in the official handbook published by that office. It would appear from personal inspection that the State leaves the enforcement of these sections almost wholly to the city authorities.

No attempt was made either in the food work or other field work to make extensive investigations of actual conditions. A moderate number of inspections were made in different parts of the field, some with inspectors and some alone, to get a reasonable line on average conditions. This report is especially concerned with methods, not with especially good or bad individual findings.

It was noted in this connection that manure piles and other refuse and rubbish were present rather often in close proximity to food establishments, that there was a common lack of protection against flies, dirt, and improper handling; that there was a frequent, perhaps general, lack of provision for personal cleanliness; that many illegal toilets existed; that common towels and common drinking cups were in habitual use; and that there were frequently apparent the results of an absence of intelligent control of the sanitary aspects of building construction. For most of these conditions, however, the health bureau can not at present be held responsible.

The present inspection is doing some good, more than might be supposed. It needs first of all to be organized by someone who knows the theory and practice of food inspection, and then to be given close supervision. It does not need more inspectors to run about in a methodless, even if zealous and industrious, but unsupervised manner.

DAIRY DIVISION.

The dairy division consists of a chief dairy inspector and an assistant at \$1,500 and \$1,080, respectively. The inspector also receives gasoline and oil for his automobile, but no tires or repairs. The

chief has, so far as could be learned, no special training for his position and has acquired very little of the more technical kind of knowledge; he has, however, a large amount of practical experience.

The records of this division are in better shape than any others in the bureau. They are not by any means first class in form, but they are neatly kept, and readily accessible.

Dairy Inspection—Ordinances.

The local ordinances in regard to dairy inspection may be summarized as follows:

- (1) Dealers must be licensed.
- (2) Applicant must state source of supply and before receiving license must file herd report of tuberculosis test.
- (3) Filing application authorizes engaging in business without further ado.
- (4) The health officer transmits application with a statement as to whether applicant has complied with ordinance and is "a fit and proper person, etc."
- (5) The council considers report and grants license by resolution.
- (6) The health department then approves of license by license inspector.
- (7) Containers of milk arriving into the city must be marked so as to identify producers.
- (8) Cows must be tuberculin tested once a year.
- (9) Any "duly licensed veterinary" can give certificate.
- (10) Any milk from nontested herd can be seized and destroyed.
- (11) Bureau veterinary will test free inside the city limits, and will test outside of city for cost of travel expense.
- (12) Prescribes usual standards of chemical purity.
- (13) Forbids sale of bulk milk at retail.
- (14) Prohibits bottling on wagons, etc.; regulates bottling and refilling.
- (15) Bulk milk in transit must be in sealed containers.
- (16) Temperature must be kept below 50° and bacteria below 500,000.

The basic ordinance was very distinctly in advance of current practice at the time of its passage, nine years ago. It is true that it is probably partly unenforceable now, certainly was partly unenforceable then, but it contains good provisions. The later amendments are good; the amendment forbidding sale of loose milk is very good, also the temperature standard. The provision authorizing a man to begin business upon application is absurd and the tuberculin testing provision never has been really enforced, nor is there prospect that it will be except within the city limits.

Licenses.

Licenses run for a year, but expire at various dates. No license is issued to dealers other than producing dealers. The producers inside the city are apparently pretty closely looked after by the bureau veterinarian. Outside of the city, most of the producers who retail their own products and a good many producers selling to pasteurizers are tested by the State or by private veterinarians about once a year.

The records are not in shape for readily revealing the amount of milk sold in violation of the testing ordinance.

Results of Tuberculin Tests.

Inside the city limits there have been tested within the year 110 dairy herds with an aggregate of 2,051 cows. Of those tested since November, 1915, at which date the present series began, only 79 are reported as reactors. All these were condemned and slaughtered under United States inspection at the yards, and 20 of them were tanked. The percentage of reactors, less than 4 per cent, seems almost unbelievably low. There is excellent authority for saying that the percentage of reactors in the general dairy field about Minneapolis and St. Paul would be about 40 if the testing were efficiently done.

The city veterinarian has been pushing the tests on the inside herds for some years, so it is probable the percentage of reactors has been greatly reduced, but a reduction from 40 per cent to 4 per cent seems to justify the suspicion that some of the owners are resorting to illegal methods to defeat the purpose of the test.

The reports of the tests have been kept in excellent order and are filed in such a manner as to be readily accessible.

Amount, Source, and Character of Milk Supply.

No one in the bureau had any authentic data on the amount of milk sold in the city. The chief inspector had been told by some of the large dealers that the amount was 25,000 gallons per day, and he thought that about 40 per cent was pasteurized, but no data on the subject had been collected. Accordingly, all the pasteurizing firms were visited and their output was ascertained, and with the assistance of the chief inspector, whose office records were in excellent shape as far as they went, the following table was compiled as to amount and source of supply and method of receipt:

	Cream.	Milk.
	<i>Gallons.</i>	<i>Gallons.</i>
Shipped to various dealers.....	1,305	10,232
Farms "family cows" (no permit required).....	200	400
Produced on farms outside of city and marketed by producers (3,042 cows).....		4,100
Produced on farms inside city and marketed by producers (110 farms, 2,051 cows).....		6,100
	1,505	20,832
Cream computed as milk, $1,505 \times 6$		9,030
Total milk and cream.....		29,862

These figures are believed to be less than the true total, which, on the basis of consumption elsewhere, is believed to be about 28,000 gallons of milk alone. Approximately 6,500 gallons, or 23.21 per

cent, are handled by the five pasteurizers, and 10,200 gallons, or 35.5 per cent, are sold directly by producer to consumer.

Since there are no bacterial counts and no records of chemical sampling available for the past two years, it is impossible to get any information on the character of the supply. It is believed, however, that on the average it is better than the extent of supervision would lead one at first glance to expect. There are several reasons for this:

1. The practically complete absence of loose milk sales.
2. The low average temperature present for several months of the year and the cheapness of ice for use in summer cooling.
3. The short haul and consequently prompt delivery direct from producer to consumer of more than a third of the total consumption.
4. The percentage of pasteurized milk sold.

Of course pasteurized milk is often of an uncertain quality, but in St. Paul it should be good. All of the plants were visited and the equipment was examined and operation watched. One of the plants was only fair as to operation though reasonably good as to equipment, but the other four were very distinctly above the average in both respects. Carelessness in detail was observed to some extent, but, on the whole, the impression left was satisfactory. Carelessness in handling bottled milk by retailers was observed, but of a kind easily corrected.

Supervision of Production and Sale.

So far as the outside supply is concerned, there seems to be practically no supervision of production, at least no effective supervision. The city does nothing; the State collects a license fee of \$1 from each producer and scores most of the farms, it is said, once a year. The State also does a small amount of tuberculin testing. The city authorities complain—with what justice, the writer does not know—that the State does not cooperate actively. Certainly nothing was found in the city files or records to show any cooperation. It is a matter that certainly should receive the prompt attention of those in authority on both sides.

For the past two years all the city effort on milk supervision has been concentrated on the scoring and improvement of the farms inside the city limits.

The scores are neatly and clearly made, and the inspector has them filed in good order and readily accessible. However, no study or tabulation of results had been made. All of the scores for the past two years were critically examined. The scores show the usual defect of untrained scoring, the lack of a true sense of values as to the proportionate importance to be attributed to certain factors, and an over-emphasis on equipment. Still, the scoring has undoubtedly been a cause of improvement. The difficulty is, of course, that there is not

a sufficiently frequent inspection to raise the standard of methods to the level of the standard of equipment.

The following table summarizes the scores of 97 inside farms, scored from January to May, 1916:

Farms scoring 20 to 40-----	0
Farms scoring 40 to 50-----	5
Farms scoring 50 to 60-----	13
Farms scoring 60 to 70-----	34
Farms scoring 70 to 80-----	33
Farms scoring 80 to 90-----	10
Farms scoring 90 to 100-----	2
	<hr/> 97

The maximum score was 96.5; the minimum score, 42; the average score, 69.

This shows that 52 farms, or 53.6 per cent, scored below 70. Certainly, if, as claimed—and it is believed justly—the two years' work has caused a distinct improvement, the conditions must have been pretty bad. It also shows that the farms as judged by scores were either pretty good or very poor.

If 53.6 per cent of the farms in the completely scored territory are below 70, the conditions in the much larger fields outside must be worse.

Comments on Inspection Methods.

The inspector has a record in which are entered the names of all persons handling milk under the following headings:

A. Herds inside.	E. Gone out of business.
B. Herds outside.	F. Pasteurizers' supply.
C. Milk producers marketing own products.	G. Hotels and restaurants.
D. Stores.	H. Not retailing (butter makers, etc.).
	I. Out of business.

This record is indexed in the book record, and a card-index file is also maintained. The card is a very good form for the purpose for which it is employed but open to the serious objection common to all the bureau records, that it has been designed to meet an individual opinion as to a particular phase of the work without regard to adaptability to standard filing equipment or, what is much more objectionable, without being coordinated with the general system of record and report. The inspection service is not logical in its methods. It is manifest that the control of the five pasteurizers, by frequent sampling of the raw and finished products, would insure the safety of nearly one-third of the milk consumed in the city with an expenditure of effort much less than would secure the control of any other equal fraction of the supply. A large fraction of the total supply having been made safe by inspection of the pasteurizers,

attention should be shifted to the producing dealers and not so much stress laid upon the inspection of retailers.

Not enough active pressure is used upon dealers and producers. The inspector recalled three prosecutions in a year, but had no record of them.

Chemical sampling is generally of minor importance compared to bacteriological sampling, temperature control, bottling control, etc., and too much attention should not be given it, but to watch a city's milk supply with no recorded chemical or bacteriological sampling and no temperature taking is probably a record achievement.

The first thing for the city authorities to do is to join with Minneapolis in a study of the milk situation and then to go to the legislature for a comprehensive but not too elaborately detailed law applicable to cities of the first class. The details of matters not possible to make uniform because of difference in form of city government or legal conditions could then be handled by individual ordinances.

MEAT INSPECTION.

Field Covered by Inspector.

The meat inspection of the city of St. Paul is in the hands of one inspector at a salary of \$1,320.

The inspector has been in the service of the bureau of health for many years, for, as previously stated, the present health department recognized the importance of meat inspection and took an active interest in its development considerably in advance of the general practice of the period.

The inspector estimates that 75 per cent of the meat consumed in St. Paul is United States Government inspected at the South St. Paul yards. The remaining 25 per cent comes from two sources: First, from certain plants at the yards, and second, from the plants at what is known as the Transfer, which is a railroad yard, about midway between St. Paul and Minneapolis. These are customer plants, killing animals purchased for individual customers who buy at the yards. A very few hogs, a few lambs, and about 10,000 head of beef cattle are killed, the product of a third of which goes to St. Paul.

Of the meat killed in these two localities about 25 per cent of that consumed is entirely uninspected, or practically so, since the one city man, besides covering the slaughter houses, has to cover the butcher shops and other places in the city where meat, fish, and poultry are sold.

The inspection consists in the annual license inspection and in patrol inspections taking different sections at irregular intervals.

In the course of his rounds the inspector visits the commission houses handling meats and poultry. There are from five to seven commission houses handling enough meat to require occasional inspection. When meat is condemned the inspector sometimes kerosenes it and sometimes merely notifies the rendering plant to come and get it.

The inspector is not supplied with denaturing materials nor with "condemned," "held for inspection" tags, or other equipment. No monthly report is made as to condemnations and no official record of the condemnations and causes for them is kept. In fact, the records of the meat inspection division are represented by the inspector's notebook. Once each month a return of the number of inspections and of a few other items is made on the general sanitary police report form, and each year the inspector adds up the various items from his notebook and embodies the results in a letter to the health officer, which the latter includes in his annual report.¹

TABLE 14.—*Inspections, 1915.*

Butcher shops	1, 491	Complaints investigated	123
Commission houses	908		
Abattoirs	348	Total	3, 098
Licenses recommended	228		

TABLE 15.—*Condemnations.*

Beef	9, 110	Poultry	765
Mutton	155	Fish	620
Veal	1, 719		
Pork	1, 210	Total	13, 704
Sausage	125		

The small total of condemnations is quite striking. The inspector states that there has been a great improvement in this respect, as formerly the condemnations sometimes ran as high as 48,000 pounds. There are "about 20" wholesale houses, little and big. These are not licensed.

Prosecutions.

No records are kept of prosecutions. One warrant was taken out during the period of the writer's visit. There has been no other case since the latter part of 1914.

¹ Such letters were found in previous annual reports, but not in the completed manuscript for the unpublished report of 1915. The explanation given by the inspector was that his letter was a little late in getting in, but as the report was still unprinted it would seem that something should have been done about it.

The following summary of work done was taken from the inspector's notes:

	May 15-21.	May 21-27.
Complaints.....	1	3
License application inspections.....	3	8
Commission house inspections.....	15	19
Butcher shops.....	37	42
Abattoirs.....	7	8
Pounds condemned.....	450	118
Tuberculous cattle inspection.....	1

This gives a total of 143 inspections for 12 days, or, as Saturday is a half day, for 11 days. The abattoir inspections necessarily take considerable time, the sites being several miles apart, so the record may be better than it appears.

Live-Stock Inspection.

This title is misleading. The live-stock inspector is the bureau veterinarian. He receives \$1,500 per year, and his duties embrace the inspection of animals for glanders, rabies, and other diseases, and the tuberculin testing of dairy cattle on the farms inside city limits. During the portion of the year when this work is in active progress he is given the assistance of two laborers.

No report for the year 1915 was found, but the 1914 report is as follows:

Horses examined for glanders (negative).....	1
Number days held for observations for rabies.....	173
Case of rabies in dogs.....	1
Herds tested.....	73
Cattle tested.....	1,668
Cattle condemned.....	70

Comment.

The entire system of foodstuff inspection, including dairy, food, meat, and live-stock, should be grouped in one strong division under a chief food inspector, who should be a graduate from a good school of veterinary medicine, trained in all branches of food work and given a salary of at least \$2,500. Sufficient clerical assistance, including a stenographer, should be supplied to handle a proper system of records and correspondence and leave the chief free to study conditions and supervise the field force. Until this is done the food-supply inspection of St. Paul will remain a thing of shreds and patches. Adding more field men will not meet the situation.

DIVISION OF SANITARY INSPECTION.

Management of Office.

The force of this division consists of a chief sanitary inspector and 12 inspectors or sanitary police. The hotel inspector is nominally a part of the force, but practically is independent. The chief receives \$1,500 per year and the inspectors \$1,080. The force is uniformed and has full police powers. One inspector is permanently assigned to each ward.

The work of this division embraces the control of the varied classes of activity vaguely denominated "sanitation," the institution and maintenance of quarantine, the collection of epidemiological data relating to typhoid, and other diseases, and the taking of terminal cultures in diphtheria. The inspectors report at 8 a. m. and go out on rounds at 9 a. m., return to the office at 1 p. m., go out again at 1.30 and at 4 p. m. telephone to inquire if there is any further need for their services.

The chief inspector, being the executive head of all the office work, has no opportunity for systematic supervision of the field force. He states that each inspector is held responsible for conditions in his district, and that if too many complaints of insanitary conditions come in from an inspector's ward he goes out and "looks him over," but on further inquiry it developed that in many years of service no penalty more severe than an occasional reprimand had ever been imposed. The records giving no real clue to the character or extent of the men's activity, it was impossible to form an accurate opinion of their efficiency. The inspectors are apparently a steady lot of men, but entirely untrained as to the real significance and importance of sanitary inspection. Subject to their inherent limitations they are believed to be as efficient as they could be under the existing system.

The amount of work done is difficult to ascertain, but judging from a summary of all the inspectors' reports for one week, an average of 3.42 inspections were made per day, in addition to the institution and termination of quarantine.

In the May, 1914, report there were 135 cases quarantined for the full month, or 33.7 cases per week, which is believed to be about average, and, roughly, the same number were terminated. This gives an apparent average total of about 7 quarantine inspections per day per man.

On examining at different times the boxes in which are placed memoranda of assignment, etc., for each man, there were frequently found memoranda of quarantine assignments, complaint cards, and other papers indicating either great delay in attending to assignments or, what may be more probable, great carelessness in handling the papers.

The men do not go out on rounds as promptly as they should; one frequently sees them in the office at 9.30 a. m., or even later.

Methods of Handling Complaints.

The great majority of the sanitary complaints are received by telephone and are consequently virtually anonymous; a few come by mail, and a moderate number are made over the counter.

The chief sanitary inspector, or in his absence, the clerk and typist, receives the telephone complaints and enters them on a 2½ by 3 white card, which goes to a drawer file kept by day upon the desk of the chief inspector. The cases are assigned to the men by the chief inspector, but no assignment record is made, so that the disposition of any case can not be traced. As all hands have free access to the complaint file, and as the cards of both live and dead cases of successive years are kept in the one drawer, the file is always in confusion. No record is kept of inspections or reinspections, or of notices served, abatements secured, or prosecutions. Complaints over the counter are entered and handled as above. If the complaint is in writing the letter is handed to the inspector. When he has made the inspection the letter is destroyed if it was unsigned; if signed, the chief inspector, or in extreme cases the health officer, writes to the complainant and the letter and a carbon of the reply go to letter file in the health officer's office, where they are filed under "Complaint" by wards.

As a matter of fact, only a small percentage of complaint letters ever reach the file. They are usually lost in the process of handling.

Since the present health officer came into office it has been the practice to entrust to the sanitary police the quarantining of communicable diseases, including placarding, inspection of family of patient, supervision of maintaining quarantine, taking cultures in diphtheria, and disinfecting. It is understood that this is a return to the practice of former years, changed later by giving the quarantine work to the medical inspectors, and now resumed.

Each inspector makes a report of the work done, grouped under very vague classifications, and these reports are consolidated into a weekly report to the health officer.

In response to an inquiry as to what use was made of the weekly reports it was stated that they were "just filed"; that it had been the practice to add up the figures from the weekly reports at the end of each year, but that the chief inspector doubted if the practice would be continued, because it seemed useless to retain reports that could not be printed.

The last annual report to contain a statement of the work done by the sanitary division was that of 1910. No allusion to the subject appears in subsequent reports as printed or in the manuscript of unprinted reports.

Enforcement of Law.

To what extent the present methods are successful in securing abatements of nuisances and the improvement of sanitary conditions it is impossible to say, the absence of any system making a study of the work impossible without extensive field investigations. Neglected alley spaces and manure piles were seen with considerable frequency, and it stands to reason that this should be so as long as the division is conducted as at present. With only "about six" prosecutions, as in the past two years, enforcement must get on slowly.

Comment.

There were a number of matters, such as the discontinuance of privy vaults, which it was useless to take up in this report. There were no reliable data concerning these matters discernible anywhere.

The present system of sanitary inspection seems to cost a great deal more than it is worth.

The 12 ward men and the chief cost \$14,460 per year, or about 24 per cent of the total appropriation for the bureau of health exclusive of the public baths. This is a large amount to pay for an unsupervised patrol inspection, so run that no one can tell, or at any rate prove, whether things are getting better or worse.

General recommendations are all that are possible here, but it may be said that the whole sanitary policeman scheme should be abandoned. A system of sanitary inspection should be established under a man who understands modern methods of field and office management, at a salary of \$2,500, and the present force should be reduced to eight. This system should be based on the idea of inspection by districts, graduated in size on the basis of difficulty of control and covered by rotation of assignment. The present chief should be used as a field supervisor. Reducing the force by four will permit paying the higher salary mentioned and leave a net saving of \$1,820 to be used as hereinafter indicated.

The establishment and termination of quarantine should be taken from the hands of the sanitary inspectors.

The inspection of hotels, boarding houses, and restaurants is of a two-fold nature, relating to structural conditions and ventilation and to the methods of operation, including the quality of food served. The former part, now practically independent, should be definitely coordinated with the general sanitary system.

Hotels and Restaurants.

There is one inspector on this duty, which includes hotels, rooming houses, boarding houses, restaurants, and various kinds of lunch places.

Persons desiring to engage in business in any of these lines must make application as explained in connection with the licensing of milk dealers.

The fee for hotel license is \$25, for others \$5. This is an illogical system. Health bureau licenses are primarily for the purposes of regulation, not for revenue, and the fee should bear some sort of relation to the cost of inspection. It is absurd to charge the same fee for a restaurant with 200 seats as for a lunch stand with 5. The fees should be graded from a minimum of say \$2 to \$10 or more.

In this connection attention is called to the absurd license situation created by the provisions of the charter as to the duties of the license inspector in the police bureau. The framers of the charter evidently had in mind only licenses as a source of revenue and the enforcement of its collection, but when they made it the duty of the license inspector to "report all violations of license laws" to police, they practically set up an officer with legal authority coordinate with that of the health officer.

The licenses expire one year from issuance and consequently inspection for licensure is going on all the time, which interferes with systematic inspection.

Hotel inspections are also made by police and fire bureaus, the former noting its approval on the margin of the license issued by the health bureau, and the latter using a form of its own. If the department of parks, playgrounds, and public buildings did its full duty there would be another inspection. As mentioned above, it is very doubtful if the present inspection by the bureau of health is legal, because the bureau of buildings is charged with the duty of inspecting hotels, etc., as to compliance with legal requirements "in every regard."

In making inspections, no score card or other comparative record is used. There are no prescribed standards or methods of inspection. The inspector devised a form of card record which is in some respects a very good one, but has the defect of trying to cover all possible degrees of quality by "good," "fair," or "poor." It permits, however, of the preservation of a continuous record of inspections at different dates and has a space opposite each entry to be filled in by signature of the man making that particular inspection.

For restaurants and similar places the card is entirely inadequate, but it is impracticable to suggest details of changes in record and inspection forms in this report.

On route the inspector makes entries in a small pocket notebook, and at his leisure transfers them to the record cards kept in a file on his desk, the entries being descriptive of the character, location, etc., and then in the appropriate columns he grades the ventilation,

cleanliness, etc. As some of the entries are based on practically unchanging structural conditions, it seems superfluous to repeat them. The cards are numbered serially and bound in a loose-leaf binder. An index book is bound in with the record cards and completes the system.

The inspector practically never takes up his findings with the health officer, but with the chief of police or license inspector. Like the other special inspectors, the inspector of hotels and restaurants is the head of a little independent system of his own—a system for which the bureau is responsible, but over which it exercises little control.

It is difficult to see just what the license inspector has to do with sanitary findings in regard to an application for the issuance of a license which can be issued only on the approval of someone else.

Revocation of license or other penalty for operation not in accordance with ordinance or law is practically unknown. In over two years of service the inspector has seen but one place of business closed. There were no prosecutions or other special efforts to secure improvement in conditions during the past year. As far as known, no license has ever been revoked through action by the bureau.

Careful examination was made of the entries on all the record cards for 20 months past. Forty-one cards relating to places that had gone out of business were excluded, and the following tabulation was then made in accordance with the classification used by the inspector:

TABLE 16.—*Inspection record for 20 months.*

Kind of establishment.	Number.	Times inspected.	Number of places inspected once.
Cafe.....	11	15	1
Chop suey.....	4	9	1
Boarding houses.....	22	40	11
Wagon.....	15	31	7
Restaurants.....	92	150	38
Dairy lunch.....	2	5	1
Lunch room.....	189	376	88
Hotel.....	88	189	34
Cafeteria.....	9	27	3
Business lunch.....	101	160	33
Drug store lunch.....	3	3	3
Rooming house.....	55	109	17
Total.....	591	1,114	237

The inspector had stated that there were 160 hotels and 423 other establishments under his care. The writer does not know how he arrived at his figures.

The above table shows some rather singular conditions: For instance, there were 591 places under observation, and in the normal courses of license inspection alone each would be due for inspection

about twice. As far as the record shows, however, there were 237 places or 40 per cent inspected but once. The totals may be as small as they are from failure of the inspector to make entries. Certainly 1,114 inspections in over 500 working days does not seem an excessive amount of work.

The inspector makes a summarized report each month on the entirely uninformative general form used by sanitary police and other employees. This is worthless as an index of conditions. One ground for criticism in this connection is of general application to all the field work: Since no record is made of the conditions found, of the orders issued for improvements or abatements of nuisances or for the result of the orders, it is impossible to ascertain if any progress is being made. Personal inspection as far as made was informative as to existing conditions, but its findings could not be checked.

GARBAGE.

The collection and disposal of garbage was taken from the bureau of health by the new charter and given to the "Bureau of Sanitation." The name has been a source of endless trouble and annoyance to the bureau of health and to the public. The public simply refuses to believe that they have voted to themselves a "bureau of sanitation" unconnected with the bureau of health and blames the latter for any alleged errors of the former, misdirects its letters, etc.

Since St. Paul has apparently definitely decided to keep the bureau of health out of the waste collection and disposal there is no occasion to go into the garbage question in detail in this report. It may be said with propriety, however, that the system of garbage collection and disposal remains as objectionably primitive as formerly and that the manner of its execution has evidently gained nothing in efficiency of control or economy of administration. Indeed, in substituting wooden for iron wagon bodies a distinct step backward has been taken.

HOSPITALS.

Smallpox Hospitals.

The hospitalization of smallpox is not compulsory in St. Paul, though in extremely badly cared for cases it may be enforced; but there are enough cases and accompanying exposed persons voluntarily hospitalized to necessitate the maintenance of some simple provision for their care.

The smallpox hospital, officially known as the Dade Street Infirmary, has a very pleasant location just outside the city limits, about 5 miles from its center. It consists of a group of frame buildings in very good repair, and the furnishings and equipment are of sufficient

quality and in good condition. The state of cleanliness and order is poor for a hospital, but very good indeed for an average city institution of the character. The bedding is clean and the patients are manifestly contented and well fed.

The manner of maintaining and operating the hospital is most unusual:

1. The county shares with the city certain of the expenses of maintenance.

2. The superintendent, not a medical man, combines a variety of functions from chauffeur to nurse. He receives \$50 per month and \$2 per day for the care of each patient, including food and nursing.

3. One nurse at \$750 is provided for in the budget and the place is filled by the wife of the superintendent, not a registered nurse, who acts as housekeeper, cook, and nurse for female patients.

4. A male nurse at \$540 is provided for in the budget, but the man is merely a laborer and handy man.

5. The medical attention is provided by the city physician and is therefore entirely outside of the control of the bureau of health.

6. The superintendent has an automobile, used for transporting patients and for ordinary going and coming. He is paid \$5 per head for transporting each patient to the hospital and \$3 each for returning them when discharged. He also receives an allowance of gasoline.

The system seems to work well enough as long as the cases cared for are of the mild type, but would certainly fail to be adequate if the cases were severe. The expense in 1915 was:

Salaries and wages-----	\$1,860.00
Care of smallpox-----	2,458.00
Livery-----	521.00
Repairs-----	110.26
Total-----	<u>4,949.26</u>

Adding gasoline and some minor items will run the cost over \$5,000.

The plan of saddling the health department with the responsibility for the hospital care of smallpox and not permitting it to control the medical service is to be strongly condemned.

Hospital Care of Contagious Diseases and Tuberculosis.

The city and county cooperate in maintaining a general hospital with which the bureau of health has no connection and a general description of which is outside the scope of this report, but it must be referred to because of its relation to the care of contagious diseases and tuberculosis.

The hospital is widely known for the efficiency of its administration and for the superior quality of its equipment. The medical superintendent, in office 35 years, is recognized as a leader in his specialty.

At this hospital one wing is reserved for diphtheria and scarlet fever. The wing is a good average hospital structure, but not built in accordance with what is believed to be the best practice in contagious disease hospitals. The cleanliness and order are excellent, but the plan for medical attention does not seem to be adequate. A portion of the building is occupied by chronic patients from general wards.

It is difficult to understand the reasoning that would withhold from the bureau of health the care of the patients hospitalized by its orders, the care and discharge of whom involve matters linked directly to the field activities of that bureau.

During 1915, 228 cases of diphtheria and 215 cases of scarlet fever were hospitalized. Measles, whooping cough, and chicken pox are not hospitalized.

Under the State law providing for the maintenance by counties of sanatoria for tuberculosis the county has combined with the city in the provision of a wing at the general hospital for the care of tuberculous patients. It must be said that the result is not a success. The building is an excellent hospital building and the administration that of a high-class hospital, but it is not a sanatorium and never can be one. The limited site and structural limitations absolutely prevent carrying on the true sanatorium care of tuberculosis. Moreover, the psychology of the consumptive predoomed the experiment to be a failure. Everywhere the majority of tuberculosis patients regard a hospital as a place to which consumptives are sent to die and a sanatorium as a place to which consumptives go to get well. A hospital presupposes care under practically uniform conditions until time of discharge. A sanatorium presupposes care under progressively changing conditions.

Sooner or later the city and county will have to provide a real sanatorium. When it is established, it should be under the control of the bureau of health. The city will supply the overwhelming majority of the patients, and the city has the only well organized system of recording and observing tuberculosis. A sanatorium is a logical part of such a service.

PUBLIC BATHS.

The public baths operated by the bureau of health are a very remarkable institution. Their acquisition has been referred to above. They are located on a charmingly situated island (Harriet Island), opposite the central part of the city, and close to the right bank of

the Mississippi. The plant includes swimming baths for both sexes, playgrounds, athletic fields, dancing pavillion, and other features. The island is a very popular and successful institution and a permanent testimony to the foresight and enthusiasm of the present health officer.

The bureau of health operates all parts of the plant, including refreshment supply, dancing, and other recreational features. Owing to a succession of freshets the island was partly under water during all of the time this study was in progress, and therefore no observations could be made of the methods of operation. Except for a superintendent at \$1,200 and two watchmen, the force employed is on the payroll only during the summer. The financial statement of the bureau gives the details as to appropriations and expenditures.

As already noted, the appropriation for Harriet Island was \$20,700, or 25.57 per cent of the total appropriated for all bureau of health purposes. In addition, the receipts from the restaurant and other sources of revenue (\$3,228.60) are expended in operation.

Toward the end of the year, when the Harriet Island bills have to be paid, balances to the credit of the health fund are transferred to the baths account to cover the deficit. These balances should not exist. With the existing need for all sorts of things substantial balances should not be carried until late in December. On November 1, 1915, \$1,000 was transferred to the health fund from "Administration public safety," and on November 11, \$1,000 was transferred from "Health account" to "Bath account." Why this transfer was not made directly does not appear. In addition, \$600 was taken from "Health account" and transferred to the "Bath account" on November 29. December 28, \$1,100 was transferred from "Health account" to the "Bath account" and also \$200 from the "Quarantine account." The Harriet Island playground is an institution of which from all accounts St. Paul can be proud, but drawing from the health bureau funds proper for its support does not seem to be sound practice.

EDUCATIONAL ACTIVITIES.

These constitute beyond a doubt potentially the most important part of the duties of a bureau of health. Such a bureau can not be expected to be very much better than the intelligence of the citizens demands. It is the function of the health officer to inspire the public demand for sanitary advances rather than to force them. The only way such popular demand can be created is by arousing popular interest in the problems of personal and community hygiene. This must be done by lectures, bulletins, posters, lantern slides, and moving-picture shows, and similar methods.

The Bureau of Health of St. Paul has no educational activities whatever. If the bureau is reorganized one of the first things provided for should be the educational activities.

Another related matter to which no attention is given at present is the education and training of the bureau's personnel. Twelve dollars per year is spent for technical journals for the laboratory and a reasonable number of technical textbooks are on the laboratory shelves; but there is not a single book or journal supplied for the use of the rest of the force and no system of instruction for the force. A large number of bulletins and other publications issued by United States, State and municipal agencies are received; but as far as could be determined no use is made of them; certainly no files of them are kept, and they mostly find their way to the wastebasket.

MEDICAL DIVISION.

The immediate head of the medical division is the deputy health officer at a salary of \$2,500. No provision could be found in the charter or ordinances fixing a standard for the hours of employment of this official different from the one prescribed for city officials generally. With the approval, as understood, of the health officer, however, the deputy health officer gives only a portion of his time to the work in the bureau of health. As near as could be ascertained, from two to three hours of actual presence in the office is the average. No doubt this amount of service is considerably exceeded at times, and it is quite possible that some additional time is spent in activities outside of the office.

The present incumbent has been connected with the bureau for a number of years, off and on, having been in charge of the laboratory for several years, chief health officer for two years, five or six years ago, and deputy for the past two years. He is, therefore, well informed as to the health conditions in the city and the operations of the bureau.

It is not thought necessary to go into the methods of the medical division in very great detail, to discuss very fully the theories of disease control upon which these methods are based, or to set forth the results obtained. To some extent this last has already been done in treating of the communicable disease situation in the city. Only a brief summary of the methods will therefore be given.

The division's work falls into two classes: That in relation to the reportable diseases other than tuberculosis, and the tuberculosis work. The latter has really only a very theoretical subordination to the control of the division; even the office, clerical force, and methods are quite distinct.

Reportable Diseases.

Under the State law physicians are required to report in writing upon a prescribed postcard form the following diseases:

Poliomyelitis,	Rabies,
Cerebrospinal meningitis,	Scarlet fever (scarlatina, scarlet rash),
Chicken pox,	Smallpox,
Diphtheria (laryngeal and membranous croup),	Trachoma,
Erysipelas,	Tuberculosis,
Measles,	Typhoid fever,
Ophthalmia neonatorum,	Whoopingcough.

General Rules for Quarantine Disinfection.

As it does not appear expedient to discuss the detailed procedures of the bureau of health for the control of reportable diseases other than diphtheria, scarlet fever, measles, typhoid fever, and smallpox, the State board rules will not be given in detail. As relating to these diseases the rules will be summarized as follows, the text being that of the official leaflet and placards issued by the bureau of health:

SCARLET FEVER.

The commissioner of health having knowledge of or having reason to suspect the existence of scarlet fever, shall investigate, if necessary, and shall at once place under quarantine all scarlet fever patients and those having the care of or coming in contact with such patients, except the attending physician, medical inspector, sanitary inspector, or, in case of death, a licensed embalmer.

The quarantine period for scarlet fever shall never be less than three weeks, and may be longer. Quarantine must not be released until the medical inspector has satisfied himself that desquamation (or peeling) is completed, and that the condition of the nose and throat is normal.

The apartments occupied by a scarlet fever patient shall be deemed infected, and when vacated by death or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of a sanitary inspector. All persons having occupied such apartments during the quarantine period must have their clothing disinfected and take a disinfecting bath before being released from quarantine. All disinfections prescribed in this regulation shall be a part of the control of the disease.

No milk, butter, or other dairy product shall be sold or given to any party, or delivered to any creamery or butter factory, from a house quarantined because of the presence of scarlet fever therein.

Every physician shall immediately report to the commissioner of health in writing the name of every patient under his care having scarlet fever, the state of his or her disease, and his or her place of dwelling. A report must be made for each case as it occurs in a family or household.

DIPHTHERIA.

The commissioner of health having knowledge of or having reason to suspect the existence of diphtheria shall immediately secure a culture from the nose and throat of the suspected individual and submit the same to the laboratory of the department of health for examination. A suspicious case must be quar-

antined as diphtheria until the diagnosis is confirmed or denied by the laboratory findings. An undoubtful clinical case of diphtheria must be quarantined even with negative finding from the first laboratory examination.

The quarantine of diphtheria shall be continued until a negative report has been made from the laboratory of the department of health on cultures from nose and throat of the person quarantined, followed by a negative report on cultures taken from nose and throat, not less than 24 hours thereafter, so as to constitute two successive negative reports on cultures from both nose and throat. Cultures by representatives of the health department shall not be taken until two weeks have elapsed from the date of quarantine and shall be taken by said representatives of the health department twice a week thereafter until quarantine is released. Physicians may submit cultures for patients at any time after quarantine is established provided that when a negative culture is obtained the final culture releasing patient from quarantine shall be taken by a representative of the health department.

A school teacher or pupil released from quarantine at the expiration of the six weeks' period without two successive negative reports from the laboratory of the department of health must not attend private, parochial, church or Sunday school or any public gathering, until two successive negative reports have been made.

A nurse or other person who has been under quarantine with a diphtheria case, and who wishes to be released before the quarantine period has expired, must be separated from the patient, and have cultures taken from both nose and throat for examination in the laboratory of the department of health. When such cultures are reported as negative, the person from whom they are taken may be released from quarantine after having had a full bath and a thorough disinfection of all clothing to be worn or taken from the quarantined house.

The final sections are identical with those for scarlet fever.

The following is an extract from placard, warning milkmen, grocers, and others not to enter house:

"The family will put vessels outside into which milk and cream must be poured by the milkman, who must not handle the vessel or receive tickets or money until this quarantine is released."

SMALLPOX.

The commissioner of health having knowledge of, or having reason to suspect, the existence of smallpox, shall investigate, and at once place upon the house where smallpox exists a sign setting forth the facts. This sign is to serve only as a warning to those who wish to avoid the house and not as an indication of quarantine. When the attending physician considers a smallpox patient as having recovered he shall report the fact in writing to the commissioner of health, who shall thereupon order an examination of the patient by the medical inspector. Isolation restrictions shall be removed only upon order of the medical inspector. The patient must not leave the house until the removal of the warning card.

The apartments occupied by a smallpox patient shall be deemed infected, and when vacated by death, or removal of the patient shall, together with their contents, be thoroughly disinfected under the supervision of the sanitary inspector.

Every physician shall immediately report to the commissioner of health, in writing, the name of every smallpox patient under his care, the state of his or her disease and his or her place of residence. A report must be made for each case as it occurs in a family or household.

VACCINATION.

Following an exposure of smallpox, every individual who can not show evidence of a recent successful vaccination or a recent attack of smallpox must be vaccinated (within three (3) days of the first exposure) or placed under the same isolation restrictions as smallpox patients. Any regular practicing physician may be employed for this purpose, or upon request the medical inspector shall call at the residence for the purpose of vaccinating such persons as require vaccination under this regulation. Medical inspectors shall vaccinate all persons applying at the office of the department of health at 10 a. m. and 2 p. m. every day except Sunday.

If smallpox prevails in a community, or if the disease appears in a school, all unvaccinated teachers and pupils must be excluded from school for a period of three weeks unless vaccinated within three (3) days of first exposure. Failing to comply with this requirement, the school must be closed for a period of three weeks.

If smallpox appears in any class in any college in St. Paul, all unvaccinated teachers and students in the class must be excluded from recitations for a period of three weeks unless vaccinated within three (3) days of first exposure. Failing to comply with this requirement the classes attended by such teachers or students must be discontinued for a period of three weeks.

SMALLPOX DISINFECTION.

All persons having been ill with smallpox must have their clothing disinfected and take a disinfecting bath before being released from quarantine.

In accordance with the above regulations, patients shall be isolated in their homes when their quarters are deemed suitable by the inspector from this department.

Wage earners of the family, after complying with the vaccination requirements, are permitted to attend to their usual duties but are not permitted to attend public gatherings such as church, theaters, etc. Children are not permitted to attend school for a period of two weeks after exposure.

When requested by the family, their private physicians will be permitted to attend to the vaccination of the members of the family; otherwise this work shall be done by the medical inspectors of this department.

Patients residing in apartment houses, lodging houses, hotels, etc., shall be removed and cared for at the smallpox hospital at their own expense if they are able to pay for same, but if not, then, at the expense of the city. (This is required by the city charter.)

MEASLES.

In brief, the State board rules provide for notification of the school authorities, placarding, quarantine of patient and susceptible contacts until 10 days after appearance of last case in the house, and permit children who have had the disease to attend school upon written permission of health officer. Terminal disinfection of the premises is not required.

TYPHOID FEVER.

For typhoid the State rules prescribe the usual procedure in regard to general matters of care of the patient, discharges, sale or handling of food products, burials, and school exclusion; and for the placarding of the houses and the screening of the sick room in fly season.

Disinfection.

The rules of the State board provide for gaseous disinfection by formaldehyde, or as an alternative for disinfection of fabrics by chemical solutions, boiling and when applicable aeration and exposure to sunlight followed by intensive mechanical cleaning and chemical disinfection of walls, floors, etc.

No printed or written rules on the subject could be found in the bureau, but the practice is to employ gaseous disinfection by means of paraform candles.

The disinfection is done by the sanitary policemen. As far as could be ascertained these men had been given no instructions in the theory and practice of disinfection. No attention is paid by them to temperature or humidity conditions in using formaldehyde. The important part of disinfection is the treatment of fabrics and the mechanical cleaning of surfaces. Apparently no attention is paid to these matters, nor are the rooms to be disinfected properly sealed. Without giving in detail the reason for the opinion it is believed that the terminal disinfection practiced in St. Paul does not achieve the purpose for which it is employed.

The law requires that people who can afford to do so must pay for disinfection. It would be difficult to establish a more illogical procedure than charging for disinfection. It amounts to imposing a fine on a family for getting sick. The theory is apparently that to have a communicable disease in the family endangers the neighbors, overlooking the fact that there could not have been a communicable disease in the house if the neighbors had not had it first.

The methods of rendering bills and accounting for collections are very unsatisfactory. In 1915 the total receipts were \$529.76, an average of \$1.35 for each disinfection collected for.

In this connection attention should be invited to the fact that formalin candles are charged to the citizens at 50 cents apiece, although their cost has never been above 12½ cents, and before the war was much less.

Methods of Handling Reportable Disease Records.

Office routine.—The telephone operator is also the clerk and the typist. She receives reports of reportable diseases from (1) any physician by telephone, (2) any citizen, (3) the city hospital (other hospitals transfer their contagious-disease cases to the city hospital without reporting), and (4) the bureau of child hygiene of the board of education.

The school nurse reports by telephone and the report is confirmed the next day by the bureau of education on a form upon which is a memorandum of the facts. These forms are numbered serially and a carbon copy is retained by the bureau of education.

When a report is received from any of the above sources the name, address, and other particulars are entered on a buff card 2½ by 4 inches (Form No. 1). The card is then sent to the chief sanitary inspector, who puts it in the box of the inspector for the wards concerned.

[Form No. 1.]

ST. PAUL, MINN.,-----, 191---

To the BUREAU OF HEALTH:

At number-----Street or Avenue
 Exists a case of-----
 Name of patient-----Sex-----Age-----
 Name of patient-----Sex-----Age-----
 Name of patient-----Sex-----Age-----
 Reported by-----

INSPECTOR'S QUARANTINE REPORT.

Date of quarantine-----, 191---Ward-----
 Schools attended-----
 Phone No-----Milk supply-----
 -----, *Sanitary Inspector.*

Quarantine ordered released-----, 191---
 By-----, M. D., *Attending Physician.*

Release quarantine-----, 191---
 Number of rooms to be disinfected-----
 -----, M. D., *Medical Inspector.*

Quarantine released-----, 191---Result-----
 Disinfected by-----Material used-----Cost-----
 Number of candles used-----Was disinfection paid for-----
 Remarks-----*Sanitary Inspector.*

The bureau of education confirmatory reports referred to above are in the shape of memoranda, such as, "Whooping cough L. O., age 9, at 725 Jones Street." If the case is one of a suspect, "Scarlet fever, A. B., age 10, at 711 Smith Street; kindly investigate." The confirmations of nurse reports of positive cases are kept on a spindle until the sanitary inspector has quarantined case without further investigation and returned Form No. 1 to a box on desk of chief sanitary inspector; from there it goes to the clerk. If it is a bureau of education report it is compared with their slip and then goes into a current case file, in which it is filed under each disease by street and number. If a bureau of education case, their slip is checked and returned to them. If the case was a suspect, Form No. 1 would go to the medical inspector; upon its return it would go to the chief sanitary inspector and thence follow routine as above. The clerk then makes out a "Daily report," giving name, address, school, and disease, and sends copies to bureau of education and public library.

The proceeding in the case of a suspect is in detail as follows:

There is kept on the clerk's desk a long, narrow book which is ruled across both pages at intervals of five or six lines. This is called the "doctors' book." The clerk enters on the left-hand page the name, address, date and origin of report of suspected disease, and any other information.

The medical inspector (there are three inspectors at \$1,200 on part time) when he visits office at 10 a. m. and 2 p. m., enters suspects in his district in his notebook and puts his undated initials in the margin of the left-hand page to show that he has taken assignment. He is supposed to see the cases that day. When he has seen the cases he enters at the time of his next visit to the office a pencil memorandum of his findings; this is undated and otherwise unverified. The memorandum may read "Nobody home; see them again to-day," "Positive," etc. When this entry has been made the clerk checks the report with findings to see if address, etc., agree with phone report. If it is a bureau of education case their confirmation slip is returned to them. If report is from other source, the source is notified by phone.

In addition to suspect entries, requests for the termination of quarantine are entered in the doctors' book.

The sanitary inspector when he visits the office at 8 a. m. is supposed to consult the doctors' book to ascertain findings in suspect cases and, without further assignment, he posts cards and establishes quarantine, returning the form No. 1 as above when the assignment has been attended to.

Before filing the card the clerk enters from the card on a post-binder sheet form, the date, name, address, ward, sex, age, reported by, school, quarantine established. She also gives the card a serial number and, when the case is terminated, she enters the date of release, result, disinfected by, material, and cost.

There are separate books for the following: Diphtheria, scarlet fever, measles, smallpox, whooping cough, typhoid, and infantile paralysis. For other reportable diseases, only the card file is kept. The loose leaves are kept in the binder for several years, until the book becomes too heavy to handle, and then go into a consolidated binder for all diseases, with a marginal index tab for each disease.

If secondary cases develop at the same address, the clerk takes the card from the file, enters the fact and date on the margin, and returns the card to the file, after entering on the register, as for other new cases.

When the sanitary inspector calls the chief sanitary inspector at 4 o'clock, the latter notes the call and gives the assignments, suspects report, etc., that have come in since 10 a. m. If the chief is out, the clerk handles the calls.

The sanitary inspector is supposed to keep track for himself of the approaching termination of the cases in his district, going to clerk's desk file and withdrawing the Form No. 1 card. He is supposed to take it with him into the field, but may not do so. He then visits case and takes necessary action, enters his action on card, and returns it to pigeonhole in chief sanitary inspector's desk. The telephone clerk gets it from the pigeonhole, completes register record as above, and files it in vault in a terminated file for all diseases under street name but not number.

Diphtheria.—Practically no written reports of diphtheria are made by physicians and few by the telephone. Sending in a diagnostic culture is accepted as a report. Physicians as a rule make their own diagnostic cultures, but if they request the bureau to make a culture, a sanitary inspector (policeman) is sent to do it. Cultures are from the throat only. The physician usually makes the first terminal culture, but if he has left the case the sanitary inspector makes both first and second terminal cultures.

The bureau makes no record of carriers and takes no special action concerning them, except in some special case such as a school outbreak. The culturing of all contacts in a family is required, and if anyone gives a positive he is listed as a case of diphtheria, even though no clinical symptoms are present and cultures a day or two later are negative.

At termination one culture is required from contacts, and if one is positive the whole group, including the original patient, is kept in quarantine, although the latter may have completely recovered and given repeated negative cultures. Quarantine may thus be almost indefinitely prolonged, and in this way some children may be kept out of school for weeks after they have recovered.

Hospitalization is voluntary. In 1915, 228 cases, or 48.4 per cent of the known cases, were hospitalized.

Scarlet fever.—The administrative procedures are the same as given in detail for diphtheria with the exception, of course, as to cultures. About a third of the cases are reported as required by law, the remainder are reported over the telephone by physicians and others, or by school authorities. Hospitalization is voluntary. In 1915 there were 215, or 25.58 per cent, hospitalized.

Measles.—The administration is the same as in scarlet fever and diphtheria. As far as could be ascertained, no attempt is made to give children the benefit of the wise provision of State rules in regard to admission to school of those who have had a previous attack of the disease. The writer found in the box of a sanitary inspector a Form No. 1 card of a family where the quarantine had been prolonged for weeks.

There is no hospitalization.

Typhoid fever.—The only report of typhoid fever made to the department is that made through the laboratory when specimens are sent in for Widal's. In nearly every case, therefore, more or less time elapses between the time when the case is first seen and the time when the making of the Widal first brings it to the attention of the department.

If the Widal is negative, the laboratory notifies the doctor. It is only when the Widal is positive that the card comes forward to the desk of the clerk in the health department. This form gives simply the date, name of the reporter, location of the case, and either the name of the patient or the name of the patient's family. There are spaces on the lower part of the card which were formerly supposed to be filled in by the health officer, but this has long been discontinued.

When the clerk receives the card from the laboratory, she writes a letter to the doctor inclosing a return envelope and a State board of health form for epidemiological report on a case of typhoid. The clerk then puts a pencil check on the corner of the card to indicate that the letter has been sent and holds it until the epidemiological report has been received. If not received promptly, she writes a second letter and also makes a telephone inquiry of the doctor.

When the report has been received, she puts the card in a pigeon-hole. This is a recent practice instituted by the present clerk. Before her coming to the work a few months ago the cards were thrown away. Before putting the card in the pigeonhole she enters the case in the typhoid register.

If the case is an imported case a copy of the epidemiological report is forwarded to the State board of health.

The epidemiological report is placed on a spindle file and remains on the clerk's desk. There are no orders directing that further use be made of this report, but in practice the milk inspector occasionally goes over the reports.

In looking over reports it is observed that in some cases the space for reporting the source of the milk supply is either not filled in at all or has the entry "Don't know," and perhaps a later notation in pencil has been made indicating the milk supply as "Smith," "Crescent Creamery," etc.

The reports now on the spindle go back to the middle of 1914. Of the last 17 reports there are 7 in which the milk supply is not given and apparently not ascertained. At any rate, it was not entered. In some cases where the milk supply and other data are not given the sanitary inspector is sent out for the information and completes the record more or less accurately.

The deputy commissioner is supposed to study the epidemiological report, but there are no orders in existence to that effect, and both

from observation and internal evidence in the history of cases it is believed that very little study is given to them.

Cases of typhoid are not placarded nor is notice given to the milkman.

There are no printed leaflets of information and instruction available for distribution to the families of patients. No attempt is made to push antityphoid vaccination nor is there any follow-up system as to places of employment, etc.

There is no system of charging cases against the milk dealer supplying a family. In 1915, 90 cases, or 59.5 per cent, were hospitalized. This is an excellent showing if the cases are being accurately reported.

Smallpox.—The rules as previously given are from a letter sheet size leaflet several years old. Vaccination of contacts is not compulsory. Hospitalization is not compulsory. There were 17 cases under quarantine at home at the time the investigation was made. Apparently no earnest attempt is made to get full epidemiological data. Upon visiting a smallpox suspect with a medical inspector it was found that he was not expected to obtain a history or to vaccinate. His duty was to report on the diagnosis and if confirmed the sanitary policeman would visit the case, though possibly not until the next day, post the sign, vaccinate, and obtain the history.

Other reportable diseases.—Except in the case of tuberculosis, as noted below, practically nothing is done in the way of study and follow up of the other reportable diseases. At least so it was gathered from questioning the office force and inspectors and examining records. Quarantine signs are posted for whooping cough and infantile paralysis.

Schools.—In St. Paul the bureau of health has nothing to do with any part of the school medical inspection. Since this report is concerned only with the health bureau no detailed study was made of the school medical inspection.

The system of reporting cases of suspects to the bureau of health has already been indicated.

The school board records show that in the school year of 1914–15 the following cases of reportable diseases, many of which were found outside of school by the school nurses, were reported to the bureau of health by the bureau of education:

Diphtheria	146	Measles	1, 192
Scarlet fever	174	Whooping cough	1 107

Including the kindergartens and high schools there are about 40,000 children to look after. For this work one medical director

¹ Since May 1, 1916.

and 11 nurses are provided. It is manifest that under such conditions real medical inspection of the school children is impossible.

In this connection, it should be noted that the 11,000 children in the parochial schools are looked after neither by the school inspection system nor by the bureau of health.

Spot Maps.

The St. Paul bureau of health was one of the first it is believed to use the spot-map method of recording the occurrence of contagious disease. The system, however, has not been followed up according to present indications; indeed, it is used very little. When the scarlet fever map, for instance, was checked up it was found that 17 of the current cases had not been entered.

Comment on Contagious-Disease Administration.

The entire system of reporting communicable disease to the St. Paul bureau of health is extremely lax, and as a whole is in direct neglect of the rules of the State board of health, which in Minnesota have the force and effect of law.

It is undoubtedly and regrettably true that similarly defective methods are in quite common use in numbers of other cities, and it is quite possible that the results obtained are reasonably complete. None the less the methods are both careless and illegal. The law gives ample authority to the bureau of health to secure the complete report as required by law, and without the formal written official report as a basis for the development of a good system of recording and following up all contagious diseases no effective control can be secured.

The present Form No. 1 is defective in that it does not show who received the report, how it was made, the day and hour when assigned, where and how reported on, if schools were notified, and when.

The method of using Form No. 1 as a movable record with removal from file at will by anyone, etc., is very faulty and bound to lead to delay and neglect.

The practice of quarantining reported cases without any investigation is to be condemned.

The absence of a regular system of notification to schools, Sunday schools, or employers must be a frequent cause of preventable infection.

The system, if system it can be called, of making assignments to medical inspectors is primitive, there being no real record of assignment of report, and no follow up. The entire system would break down entirely but for the stenographer in the health officer's office.

It is to be noted that no active measures are taken to push the use of diphtheria antitoxin and that no record is made or notice taken of the fact of antitoxin administration or the time when administered. Neither is anything done about pushing immunization of contacts.

Nothing has been done in the direction of using the Schick test for immunity, the most important procedure introduced in connection with diphtheria since the discovery of antitoxin.

The absence of any control of the action taken by the sanitary policemen is apparent. It is not suggested that they do not faithfully discharge their duties to the best of their ability, but there is no check or supervision of their assignments to insure promptness and efficiency.

No attempt is made to make use of the reports made by druggists, under State law, of the sales of antitoxin. Systematic check of these would doubtless reveal unreported cases of diphtheria. At present these reports are bundled up and put away like waste paper.

Delay in diphtheria is dangerous and the present method of getting reports from the laboratory and acting on them causes delay.

It is noted that in making the entry in the register only the physician's last name is given, "Harris," or "Brown," which is entirely too vague.

The absence of any system of recording dates when terminations are due, following up the cases, etc., must result in careless management and frequently impose needless suffering in families in quarantine.

Poor as Form No. 1 is, its usefulness is only partially availed of; the entries on the lower part of the card are not filled in at all.

The record system should tie each part of the record of a given case to every other part of the record in the same case or group of cases. This is entirely neglected; except in the bureau of education reports there is nothing by which the clerk can check the sanitary policeman as to the time and nature of his action.

The method of terminating diphtheria upon throat culture alone is a violation of the State law.

There is no check on the authenticity of the first terminal culture.

The system of having terminal cultures taken by the sanitary policemen is to be condemned. In an undermanned bureau the taking of cultures by the medical inspectors may at times be an undue burden, but there is no possible reason to offer for not utilizing the full-time field nurses under such circumstances.

The termination of scarlet fever by the sanitary policemen on the basis of desquamation alone must result in the spread of infection. Termination on desquamation alone has long been out of date.

In this connection it is to be noted that two-thirds of the fatal cases in previous years were secondary, or household infections.

The practice of keeping recovered cases of diphtheria and measles in quarantine because other cases, or carrier cases, develop in the family is quite indefensible. The most earnest efforts of the bureau should be constantly exerted to shorten and humanize quarantine, to get children out of doors and back into school. They are not to be treated as criminals but as victims of the community's failure to protect them. The probabilities are, of course, that such quarantine produces endless evasions.

There is no apparent reason for such long quarantine in measles for there are few things better established than that measles is communicable only during the first few days of the disease.

The method of obtaining epidemiological data in typhoid fever and the lack of definite responsibility for such data as are obtained are bound to result badly. There was an illustration of this during the past year. Several cases of typhoid were reported on the service of one milk producer without anybody making investigations. When finally a medical inspector undertook to investigate on his own responsibility, one of the dairymen was found to have walking typhoid. It is alleged that the milk inspector objected to shutting up the plant on the ground that it would ruin the man's business. There were said to be 75 cases with 7 deaths from this source.

It is to be noted in this connection that the Supreme Court of Minnesota has ruled that a municipality is liable for damages if it can be shown that typhoid resulted from its neglect.

There seems to be no apparent reason for the lack of leaflets and other educational matter for distribution to the families where cases of typhoid and other diseases occur; certainly the lack of funds can not be the reason if there were considerable sums of unexpended money to the credit of the health fund in last December when the transfer was made to the bath fund.

Attention is called to the fact that when blood specimens submitted for Widal tests, etc., are reported as negative the question of the duration of illness at the time the specimen was taken should receive consideration and some attempt made to follow up the cases.

A physician takes a Widal for diagnostic purposes, the report is negative, but perhaps the case by that time is unmistakably typhoid so no second specimen is sent in and the case remains unreported. It is believed that this must frequently happen. The same thing applies to diphtheria. The records show that cases giving a negative culture are treated as not diphtheria even when a competent man has reported the case as clinically positive.

TUBERCULOSIS DIVISION.

The tuberculosis division of the St. Paul Bureau of Health is in what may be called the intermediate stage of development of anti-tuberculosis activities; that is to say, that, having passed through the stage of inauguration and maintenance by private agencies, it has passed into the stage where it is maintained and operated by the municipality but is not as yet fully operative as a subordinate branch of the central bureau.

The situation as to the division presents another characteristic phenomenon in that, when the city took over the private agency, it took it as a going concern and had to provide for a standard of expenditure at least equal to that previously maintained by the private agency. The immediate consequence of this, of course, is that this antituberculosis work gets a disproportionately large share of the total appropriation for health purposes. The tuberculosis division gets appropriations for salaries as follows:

Head nurse.....	\$1, 500
Six visiting nurses, at \$1,080.....	6, 480
One clerk.....	600
One sanitary inspector.....	1, 080
One medical inspector (part), estimated.....	600

Adding probable expense for printing and incidentals, it is seen that the total is just about 20 per cent of the total sum appropriated for all the office and field activities of the bureau of health.

The conviction can not be avoided that the city must either at once correct this disproportion or get rid of the delusion that there is something sacrosanct about antituberculosis work that requires a subordination of all other public-health activities to its demands.

Organization and Administration.

The division occupies attractively located office space in the Wilder Building. The force consists, as above noted, of a head nurse, six "visiting nurses," a clerk and typist, and one sanitary inspector. In addition, one of the medical inspectors puts in an average of two hours at the dispensary, his regular field district for work under the medical division being proportionately reduced in area. The office and administrative methods are substantially those which have become pretty well standardized throughout the United States through the agency of the national association.

In brief, the forms consist of the case-report card, the laboratory-report card, the form of institutional report, the form for report to the State, the form for report of history and physical diagnosis as recorded at the dispensary, and the field-card form, for use in obtaining the social history.

The office forms include the standard 8 by 8 case card, a form letter to physicians calling attention to unreported cases evidenced by death certificates, a similar form as follow up on sputums submitted, a form for nurses' daily report, a consolidated monthly report blank, and the usual colored index cards for active cases, deaths, and infected houses.

In addition there are the forms used in connection with work of the sanitary inspector, viz, complaint and inspection report, notices to owner or agent to renovate insanitary premises, and the large yellow placard warning of tuberculosis and forbidding occupation of premises until renovated. There are also the usual educational leaflet forms and small cards of instructions for care of premises.

The system of records and forms throughout is well designed, well arranged, and neatly kept. The tabulations of annual returns by ages, sexes, and occupations for living and fatal cases are informative and valuable for statistical study. The office is well furnished and equipped and maintained in an orderly manner.

The dispensary is not well located.

Registration.

The physicians in St. Paul are said to be very negligent of the State law requiring prompt report of cases of tuberculosis. Of the 306 fatal cases of tuberculosis in 1915, 90 cases, or 29 per cent, were reported for the first time by the death certificate, and of the 477 living cases registered in 1915 only 229, or 48 per cent, were reported by physicians.

The registration figures were:

Reported by—

Physicians	229
Positive sputums	4
Individuals	28
City and county hospitals	68
Other hospitals	54
	<hr/>
	383
	<hr/>
United charities	6
Wilder charities	1
At dispensary	87
	<hr/>
	477

The fact that the indicated case rate per 1,000 inhabitants was 1.97 in 1915, and the number registered only at death 1.56 tells its own story of imperfect registration.

At the present time the active file contains records of only 1,050 cases, and yet the work of the division seems to be actively and efficiently conducted.

Field and Dispensary Work.

When a case is reported from any authoritative source, it is entered on an assignment book and the clerk makes out the assignments from this. A separate register is kept for suspects and contacts with serial numbers corresponding to the case card number. If the case is a dispensary one or one visited by the nurse, she makes out the 8 by 8 inch record card and turns it in to the stenographer, who makes out the index card and returns the case card to nurse for her individual case record file.

The nurses are not uniformed. They are called "visiting nurses," and they not only make calls to obtain data and give instructions, but give active nursing care to bed cases and dress surgical cases.

As noted the division has six nurses in field force, but in 1915 there was one privately supported nurse working with the division for the entire year and another for two months. The nurses made 17,846 calls in 1915. The dispensary is open from 1 to 4 p. m., or if necessary all day. As a matter of fact it averages about two hours a day active work.

The sanitary inspector follows up the nurse report and other complaints of insanitary conditions, and while these are supposed to be connected directly with the antituberculosis work alone the work insensibly grades off into ordinary sanitary inspection. The inspector orders alterations and improvements of various kinds, and if the conditions are extremely bad he may placard house as not to be occupied until released.

The division has no hospital or sanatorium accommodations under its control. There is a camp for children maintained by private agencies, a small sanatorium maintained in the same way, and the wards in the city and county hospital already referred to.

Comment.

It is not thought that the present detached position of the tuberculosis division is an advantageous one for either the bureau or division. It seems a pity to give up the present pleasant offices and move to the city hall, but it should be done or the bureau can never have the direct administrative control of the tuberculosis work or coordinate it with its other work. Moreover, the employees of the tuberculosis division need to have it impressed upon them that they are an integral part of the bureau of health and not an annex.

The title "visiting nurse" seems most inappropriate. "Visiting nurse" has a definite recognized meaning in medico-sociological nomenclature; the proper name for the corps is "field nurse bureau of health," or "field nurse" for short.

The corps should be in uniform. The usual objections are raised, all based upon the idea of deferring to the phthisisphobia of ignorant

people and not a little strengthened by the prejudices of the nurses themselves. The city uniform would be a protection, an introduction, an aid to supervision, and a badge of authority.

It will be observed that the division forms contain no provision for a weekly or monthly report to the health officer. This should be corrected. It was clearly apparent that the central office was in but faint touch with the work of its largest and most efficient division.

It is to be noted that no cases are registered as reported by the school authorities and that there is no evidence of any active work by the division in connection with the schools. If the city of St. Paul had only \$11,000 to spend per year on tuberculosis, it would get more for its money by spending it on school children than in any other way.

The incompleteness of the registration is manifest—with only about one and one-half cases recorded for each death there can be no dispute on that point. The indicated case rate per 1,000 inhabitants was 1.971 in 1915. In Minneapolis it was 3.324. Both are woefully incomplete, of course, but there is no reason for the St. Paul reporting being only about two-thirds as complete as that of its neighbor.

There seems to be reason to think that it is a mistake to center all the housing improvement work done by the bureau about the tuberculosis activity work. Unsupervised inspection urged on by commendable zeal for improvements and unchecked by a sense of proportion is apt to put emphasis on the unessential.

The power to placard premises should be used with reserve. There is really no justification for having two kinds of sanitary inspectors under two systems of management.

The present sanitary inspection in the tuberculosis division has in it the germ of real housing inspection. It should be developed and strengthened, but not outside of the bureau proper.

GENERAL CONCLUSIONS.

(1) The illogical, incomplete, and contradictory provisions of the present charter do not permit the city of St. Paul to obtain a central health agency of comprehensive scope and adequate power.

(2) The existing powers of the charter as regards matters affecting the maintenance of the physical efficiency of the public have been very imperfectly and incompletely exercised, the fact seeming to be that both the officials and the public are still thinking in terms of the old charter. They complain of the fit of the new municipal uniform without ever having fully tried it on.

(3) The existing bureau of health to a large extent fails to avail itself of even the incomplete utilization by the city of its charter powers.

(4) The responsibility for the last mentioned fact rests partly upon the city government and partly upon the bureau of health, but principally upon the citizens generally.

(5) The control of housing should be in the hands of the bureau of health, and also such portions of public recreation as are not already under its control.

(6) The limitations placed upon the choice and term of service of the health officer are illogical and harmful.

(7) There is urgent need of greatly extending the scope of the medical inspection in the public schools. Such inspection is the proper function of the bureau of health.

(8) The present system of collecting and disposing of municipal wastes is insanitary and inefficient.

(9) There is an undue incidence of some of the preventable communicable diseases in the city of St. Paul.

(10) There seems to be some evidence that too much consideration has been given to the personality of persons involved in neglect of sanitary requirements, not from improper motives but from complacency.

(11) The sum of 23 cents per capita is too small to permit the bureau of health being adequate.

(12) Even within the limitations of the present legal and financial resources it would be possible to have a creditable health bureau if a full-time man was given earnest public support.

(13) There is great indefiniteness as to just what effect the charter has had on the validity of the old health ordinances.

(14) The charter provision requiring council action to change an administrative rule tends to prevent efficient administration.

(15) The offices of the bureau of health are inadequate in size and almost completely lacking the modern equipment necessary for the efficient operation of such a bureau.

(16) There are no systems of time records, work standards, efficiency markings, demerits, disciplinary penalties, or promotion for any of the employees.

(17) There is an entire absence of any system of property record and accountability.

(18) The methods of recording results of both office and field activities are inadequate and inefficient.

(19) There is an almost complete lack of systematic planning and supervision of the field activities and office methods.

(20) The enforcement of the law by court action or by revocation of license is very imperfect.

(21) The staff of the laboratory is underpaid and required to work unreasonably long hours.

(22) The potential working time of the laboratory is only partially utilized because of lack of systematic correlation of its work to the activities of the bureau, for which lack the laboratory is not responsible.

(23) The methods of transacting business in the bureau of vital statistics are careless and make possible fraud and crime.

(24) The general systems of food, meat, milk, hotel, and sanitary inspections are operated without systematic methods of supervision, and in consequence are not as efficient as they should be, but with the exception of the milk inspection the imperfections in the work accomplished are not of special sanitary importance. The milk inspection is not devoting its time to the phases of the work that would produce the maximum of sanitary protection for the effort expended.

(25) The system under which sanitary police are permanently assigned to duty in a ward is wasteful and inefficient.

(26) The system which permits the taking of diphtheria cultures by the sanitary police is wholly indefensible.

(27) The system of handling reportable diseases by the medical division is faulty in conception and imperfect in execution, but this is in no sense the fault of the employees of that division.

(28) The tuberculosis work is well planned and efficiently conducted.

(29) The smallpox hospital, although organized and maintained on a plan open to serious objections, is adequate in size and reasonably satisfactory.

(30) The professional care in hospital of contagious diseases is properly a function of the bureau of health.

(31) The same is true of the care of the tuberculosis cases, and a general hospital on a limited site is an undesirable place for the operation of a municipal or county sanatorium for tuberculosis.

(32) The concentration of all the field nurse activities of the bureau upon tuberculosis alone is a mistake.

(33) The defects noted as to supervision are the logical consequences of an outgrown system and not the result of conscious neglect.

(34) In spite of the above grounds for criticism much zeal and intelligence have been and are being shown by many of the employees of the bureau.

RECOMMENDATIONS.

(1) When the work of amending the charter is taken up, an endeavor should be made to clarify the present confused conditions of the sections directly affecting the efficiency of the bureau of health by recognizing the relative importance of that bureau as an agency of municipal government.

(2) Whatever else is done, the administrative control of all matters relating to housing should be placed under the bureau or department of health, and provisions made for putting under the same control all expansions of public recreational character other than the parks, and also any future development of what are usually denominated public welfare activities.

(3) The position of health officer should be made a full-time position, and filled by an experienced sanitarian with a term of office of not less than four years.

(4) Provision should be made for giving the chief of the bureau of health the authority to make necessary changes in administrative procedures without referring every detail of such changes to the council.

(5) The position of part-time deputy health officer should be abolished and replaced by that of full-time chief of division of medical inspection, with authority to act for the chief in his absence.

(6) The meat, food, and milk divisions and office of veterinarian should be consolidated into one division of food inspection under a trained chief inspector.

(7) Hotel and restaurant inspection in so far as relates to structural conditions should be made a part of the housing work, but pending the inauguration of that work the inspection should be made an integral part of the division of sanitary inspection.

(8) To the division of sanitary inspection should be given control of public baths. The number of sanitary policemen should be reduced to eight men working on assignment, and not employed at all in establishing or terminating quarantine.

(9) The chief sanitary inspector should become the active field supervisor of the sanitary inspection.

(10) The number of medical inspectors should be increased to five on full time at adequate salaries, and all medical work, including supervision of baths, checking of death certificates, operation of tuberculosis dispensary, verifying diagnosis, vaccinating, etc., should be handled by them, and the entire system of handling reportable diseases should be modernized and humanized.

(11) The tuberculosis division should be moved to the city hall and placed directly under the chief of the medical division.

(12) The number of field nurses should be increased by four and the scope of the work done by them should be widened from the present concentration upon tuberculosis alone, by inaugurating some infant welfare activity and by assigning to them the work of giving the necessary instructions in the purpose and rules of quarantine, and the performance of terminal disinfections.

(13) The plan of substituting revocable permits for fixed term licenses should be inaugurated and expanded as rapidly as possible

for the control of the operation of places of food handling and of other activities under the control of the bureau.

(14) The present system of maintaining the smallpox hospital should be replaced by one of direct appropriation for the maintenance of patients.

(15) A suitable addition, at least two clerks and a stenographer, should be made to the office force and organized under a chief clerk; proper methods of handling correspondence, complaints, records, files, and reports should be established.

(16) Provision should be made for inaugurating the educational work of the bureau.

(17) A system of property accountability, records, work standards, and efficiency markings and disciplinary measures should be inaugurated as rapidly as possible.

(18) Provisions should be made for a definite system of promotion and increased compensation, based upon length of service, current efficiency, and examinations.

(19) The entire system of health ordinances should be revised, effect should be given by legislation to the ample powers vested in the council, and the resulting sanitary code should be printed in book form.

(20) A general revision should be made of the rules for handling reportable diseases and the State law requiring the reporting of such diseases should be rigidly enforced.

(21) To the bureau of health should be given the medical care of patients with communicable diseases hospitalized by its orders.¹

¹ It is recognized that many matters of importance regarding sanitary conditions in the city, and for the protection of the health and lives of its citizens have not been referred to in the body of this report, the findings, or recommendations. The omissions have been intentional in order to concentrate attention upon matters of immediately major importance.